REMARKS

This application has been carefully reviewed in light of the Office Action dated March 8, 2007. Claims 1 to 22 remain in the application, of which Claims 1, 9 and 12 are independent. Reconsideration and further examination are respectfully requested.

The claims have been amended merely to address formal matters, such as to provide better antecedence. None of the amendments are believed to change the scope of the claims.

Applicants wish to thank the Examiner for the indication that Claims 8 and 19 would be allowable if rewritten into independent form. Applicants have chosen not to rewrite these claims into independent form at this time since it is believed that their base claims are allowable for at least the reasons set forth below.

In the Office Action, Claims 1 to 7, 9 to 18 and 20 to 22 were rejected under 35 U.S.C. § 102(e) over U.S. Publication No. 2005/0237928 (Le Scolan). The rejections are respectfully traversed and the Examiner is requested to reconsider and withdraw the rejections in light of the following comments.

The present invention relates to the synchronization of backbone network (called a basic network in the specification of the present application) nodes for the transmission of a data stream. A data stream is being received by an entry node of the network, in the form of packets (referenced as "first packets" in the claims). The entry node forms network packets (referenced as "second packets" in the claims) by encapsulating at least one sub-part of at least one first packet. Generally, the beginning of a first packet does not match with the beginning of one of the second packets formed by the entry node. In other words, the destination node of the network might not be synchronized

with the data stream since the beginning of the first packets generated by the original source device do not coincide with the beginning (of the payload) of the packets formed by the entry node.

The invention allows the destination node of the backbone network to be synchronized with a data stream, when the entry node providing the data stream on the backbone network forms backbone network packets for which the beginning of the payload does not match the beginning of the packets generated by the original source device. This is achieved by adapting the entry node so that, on the occurrence of a predetermined event, it (1) forms a second packet, being a synchronization packet, such that the beginning of the payload of the synchronization packet corresponds to the beginning of the payload of a first packet, and (2) inserts a synchronization marker in the second synchronization packet. The predetermined event can be, for example, (a) the addition of another destination node to an already existing stream on the backbone network, or (b) predetermined timing event (redundant event). The destination node, when starting to receive a new stream, swallows the backbone network data packets of the stream until receiving a data packet containing a synchronization marker. Once received, the destination node can start processing the contents of backbone network data packets, the beginning of the payload of the packet containing the synchronization marker corresponding to the beginning of the payload at a packet as initiated by the original source device.

Referring specifically to the claims, Claim 1 is directed to a method for the insertion of information to synchronize a destination node with a data stream transmitted from an entry terminal in a heterogeneous network, the heterogeneous network including at least one sub-network conveying first packets and one basic network conveying second

packets, the entry terminal being connected to the sub-network, the sub-network being connected to the basic network by means of an entry node forming the second packets from at least one sub-part of at least one first packet, wherein, at the occurrence of at least one pre-determined event, the entry node: forms a second synchronization packet such that the beginning of useful information of the second synchronization packet corresponds to the beginning of the first packet, inserts a synchronization marker in the second synchronization packet, and modifies the size of a second packet preceding the second synchronization packet.

Claim 12 is an apparatus claim that substantially corresponds to Claim 1.

Claim 9 is a method for the processing of information for the synchronizing of a destination node with a data stream transmitted from an entry terminal in a heterogeneous network, the heterogeneous network including at least one sub-network conveying first packets and a basic network conveying second packets, the sub-network being connected to the basic network by means of a destination node, wherein the destination node: detects a second synchronization packet among the second packets conveyed by the basic network by means of a synchronization marker contained in the second synchronization packet, forms a first synchronization packet from at least one second synchronization packet, such that the beginning of the first synchronization packet corresponds to the beginning of useful information of the second synchronization packet, and transfers the first synchronization packet to the sub-network.

Claim 20 is an apparatus claim that substantially corresponds to Claim 9.

The applied art of Le Scolan does not teach the features of the invention. IN this regard, Le Scolan deals with the synchronization of clocks of IEEE1394 buses

interconnected through a wireless network. Each IEEE1394 bus has a cycle master node, which is in charge of generating the bus clock cycles. All cycle master nodes in the network generate cycles using their internal clocks and thus the duration of these cycles will depend on the precision of each particular clock. The synchronization of the isochronous cycles on a serial communication bus is checked by the cycle master node of the bus under consideration, which can be defined as a synchronization node of the bus. Differences between internal clocks of cycle master nodes create a phase shift in between the generated cycles. Le Scolan discloses a clock synchronization mechanism in between cycle master nodes of IEEE1394 buses interconnected by bridges through a wireless network, by inserting clock information in the data frames transmitted over the wireless network.

A first approach (fig 5) consists in using, internally to a bridge, a recurrent reference event to determine a time difference between occurrences of said reference event. This time difference information is inserted in the data frame transmitted by the bridge on the wireless network. This information is picked up by another bridge connected to the wireless network and is used to adjust the clock of the cycle master node of the IEEE 1394 bus to which the bridge is connected, in conjunction to the time difference, computed by said bridge relatively to its internal clock, between occurrences of a similar reference event.

A second approach (fig 6a) consists in using, internally to a bridge, a recurrent reference event and to record the local time at which the reference event occurs, then to insert such information in the data frame transmitted by the bridge on the wireless network. This information is picked up by another bridge connected to the wireless network and is used to adjust the clock of the cycle master node of the IEEE 1394 bus to

which the bridge is connected. To achieve such adjustment, the bridge receiving such information records the local time at which a similar reference event occurs and determines the time difference between the received time information and the locally determined time information. Comparison of such difference over cycles allows determining the phase shift in between clocks and to determine the adjustment to be done on the slave cycle master node clock.

As it appears from the summaries above, the problem being addressed by the invention and by Le Scolan differ. Specifically, the invention deals with the synchronization of backbone network nodes for the transmission of a data stream. The invention aims that a node of the backbone network, which is a destination of a data stream, be synchronized with the data stream, meaning able to interpret the data included in the data stream (retrieving the original data packets that have been transported by the backbone network packets). On the other hand, Le Scolan deals with the synchronization of the clocks of cycle master nodes of buses connected by a backbone network.. Le Scolan aims at synchronizing clocks whatever are the encapsulation methods used by the backbone network packets to transport data. More precisely, Le Scolan doesn't disclose the essential features of independent claims 1 and 12, since it doesn't disclose any step or means of forming a second packet, being a synchronization packet such that the beginning of useful information (as known as payload data) of said synchronization packet corresponds to the beginning of a first packet. And in addition, Le Scolan doesn't disclose any step of modifying the size of a second packet preceding the synchronization packet. Indeed Le Scolan does not disclose any mechanism that forms second packets with particular data payload correspondence as a function of the synchronization characteristics.

Additionally, Le Scolan doesn't disclose the essential features of independent claims 9 and 20, since it doesn't disclose any step or means of detecting a second synchronization packet by a synchronization marker contained in it, nor step or means of forming a first synchronization packet from at least one second synchronization packet, such that the beginning of the first synchronization packet corresponds to the beginning of the useful information of the second synchronization packet.

In view of the foregoing, all of Claims 1 to 22 are believed to be allowable.

No other matters having been raised, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

/Edward Kmett/

Edward A. Kmett
Attorney for Applicants
Registration No.: 42,746

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3800
Facsimile: (212) 218-2200

FCHS_WS 1421530v1